California Environmental Protection Agency AIR RESOURCES BOARD	DETROIT DIESEL CORPORATION	EXECUTIVE ORDER U-R-007-0085 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-02-003;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2004	4DDXL08.5YJD	8.5	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Engine Control Module, Turbocharger, Charge Air Cooler	Crane, Loader, Tractor, Pump, Compressor, Generator Set

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbons (HC), oxides of nitrogen (NOx), or non-methane hydrocarbons plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kW-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
130 ≤ kW < 225	Tier 2	STD	N/A	N/A	6.6	3.5	0.20	20	15	50
225 ≤ kW < 450	Tier 2	STD	N/A	N/A	6.4	3.5	0.20	20	15	50
		CERT	--	--	6.4	1.2	0.15	19	3	37

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this 23RD day of December 2003.

Allen Lyons, Chief
Mobile Source Operations Division

Engine Model Summary Form

Manufacturer: **Detroit Diesel Corporation**
Engine category: **Nonroad CI**
EPA Engine Family: **4DDXL08.5YJD**
Mfr Family Name: **SERIES 50 (TIER 2)**
Process Code: **New Submission**

EO#U-R-007-0085

ATTACHMENT

1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
5444	Series 50	350 @ 2200	278.8	136.0	1050 @ 1350	314.5	94.1	EC TAA (all ratings)
		350 @ 1800 (261 KW)	319.4	127.5	1050 @ 1350	314.5	94.1	
5445		315 @ 2200	258.0	125.8	1050 @ 1350	312.4	93.5	DDI, ECM, TC, CAC (ALL MODELS)
		315 @ 1800	292.1	116.6	1050 @ 1350	312.4	93.5	
5446		350 @ 2100	285.5	132.9	1050 @ 1350	313.7	93.9	
		350 @ 1800	319.1	127.3	1050 @ 1350	313.7	93.9	
5447		315 @ 2100	261.9	121.9	1050 @ 1350	313.1	93.7	
		315 @ 1800	292.5	116.7	1050 @ 1350	313.1	93.7	
5449		300 @ 2100	249.4	116.1	1000 @ 1350	298.1	89.2	
		300 @ 1800	279.4	111.5	1000 @ 1350	298.1	89.2	
5450		275 @ 2100	229.8	107.0	900 @ 1350	268.4	80.3	
		275 @ 1800	255.0	101.8	900 @ 1350	268.4	80.3	
5451		250 @ 2100	209.9	97.7	800 @ 1350	242.1	72.5	
		250 @ 1800 (79.6 KW)	229.7	91.7	800 @ 1350	242.1	72.5	
5452	Series 50 Constant speed	350 @ 1800	315.1	125.8	NA	NA	NA	
5453	|	315 @ 1800	285.6	114.0	NA	NA	NA	
5454	V	250 @ 1800	229.4	91.5	NA	NA	NA	